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Appendix AHeat Loss Calculations

Each window on 3rd, 4th, 5th, & 6th floors

Heat Loss by Conduction

Dimensions 2.7' x 7'5'

Glass Area 20.6 ft²/window

Heating Degree Days - Washington DC = 4,200

Langley, Va = 4,500

= 4,500 x 24 hrs x 20.6 x 1.13

= 2,514,024 btu's/window/heating season

Heat Loss Through Infiltration

Along window edge length (crack) at assumed average winter
wind velocity of 5 mph

15' crack/window/

infiltration = 8 ft³/hour/linear foot

Total infiltration equals 120 ft³/hour, or

518,000 ft³/heating season

Heat Loss = 518,000 x 25°F (average ΔT)

x 0.018 btu/ft³/°F

= 233,100 btu's/window/heating season

Total heat loss per window = 2,750,000 btu's